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Running Head: WILL THE U.S. POVERTY ACHIEVEMENT GAP NARROW BY 2015?

Will the U.S. Poverty Achievement Gap Narrow by 2015? Probably Not

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1. Introduction

The No Child Left Behind act was signed into law in January 2002. The time frame for the study (2003 to 2009) approximates the time period for which results on the NAEP are available. (Beginning in 2003 all 50 states participated in both the reading and math NAEP assessments; prior to 2003, fewer than 50 states participated.)

One of the goals of the NCLB law is that all students be proficient in reading and math by the year 2014 as determined by the scores on state tests. Some, probably most, educators consider this goal an impossibility. In his book, *In Plain Sight: Simple, Difficult Lessons from New Jersey's Expensive Effort to Close the Achievement Gap*, (MacInnes, 2009) has this to say (in part) about the NCLB:

NCLB was conceived based on two untested propositions that had been advanced without empirical evidence or much common sense. The first is the incredible assertion that 100 percent of all students will be able to master subject material based on rigorous academic standards. . . . Not only does the time period set for achieving this impossible standard defy all research and experience in trying to improve complex systems, but also the goal itself is statistically and practically delusional.

Over the past few years, there have been occasional statements by educational leaders, politicians, and news magazine columnists to the effect that progress in “closing the achievement gap” has been made. Typically, the basis for the optimistic statements pertains to evidence for one school or one school district, not to performance at the state level, or national level.

Perhaps the most persuasive evidence concerning the need to be cautious about accepting optimistic views about “closing the achievement gap” come from the latest NAEP report (*The Nation's Report Card: Reading 2009*) (National Center for Educational Statistics, 2009). I cite the data for the White-Black achievement gaps in reading for eighth-grade students, nationally. The White-Black gaps, reported in terms of differences in average scores, for the years 2003,

2005, 2007, and 2009 were 28, 28, 27, and 26, respectively. White students scored higher. The White-Hispanic gaps for the same years were 27, 25, 25, and 24. Thus, the White-Black achievement gap decreased by only two points in six years; the White-Hispanic achievement gap only declined three points in six years. The pattern for the racial gaps in math was very similar.

In the last year or so, much attention has been given to Secretary of Education Arnie Duncan's plan to focus on 5,000 of the worst performing schools in the nation; the goal would be to "turnaround" these schools in four years or so. Secretary Duncan's plan to "restructure failing schools" has engendered some optimism in the press. But there also has been some skepticism voiced about the likely success of this approach. One skeptic is Loveless of the Brookings Institution. In a 2010 report about a 20-year longitudinal study of California elementary schools, Loveless (2010) said,

The study suggests that people who say we know how to make failing schools into successful ones but merely lack the will to do so are selling snake oil. . . . The science of turnarounds is weak and devoid of practical, effective strategies for educators to employ. Examples of large-scale system-wide turnarounds are non-existent. A lot of work needs to be done before the odds of turning around failing schools begin to tip in a favorable direction. (p. 5)

The second part of the primary objective of the study was to make projections about the size of the poverty gap for 2011, 2013, and 2015. My interest in constructing these projections was influenced by a book, *Schooling Disadvantaged Children: Racing Against Catastrophe* (Natriello et al., 1990). The thrust of the book's argument is that the proportion of the nation's Hispanic students will increase relatively rapidly by 2020, and consequently, the percentage of white students will decline substantially. The authors state their argument as follows: "Thus, assuming a constant relationship between racial/ethnic group identity and poverty, as the number and proportion of black and Hispanic children increase, so too will the number and proportion of children in poverty." (Natriello et al., 1990, p. 37). The authors summarize the projected

changes in white and Hispanic student proportions thusly: “While about 7 in 10 children in 1988 were white, only about 1 in 2 will be in 2020. While only 1 in 9 children in 1988 was Hispanic, more than 1 in 4 children will be in 2020.” *Schooling Disadvantaged Children* uses Bureau of the Census projections published in the 1980s. (Natriello et al., 1990).

In Plain Sight, noted above, MacInnes (2009) gives some attention to the increasing number of Hispanic students (Latinos) in the nation and in New Jersey. He notes that in many cities, with concentrations of students from poor families, the problems “have been compounded by the recent ‘Latinization’ of urban communities” (p. 17). MacInnes (2009) mentions two cities in New Jersey:

Two mid-sized Abbot districts, Plainfield and New Brunswick, reflect the tide of Latino growth. In the eight years since 1988, the number of African American students in Plainfield declined by 43 percent while the number of Latinos doubled. . . New Brunswick has gone through a similar change, with black students declining by one third since 1988, while Latinos increased by 85 percent. (p. 92).

The *Nation’s Report Card* series for 2005, 2007, and 2009, for both reading and math, has presented in chart form data pertaining to the changing demographics of students. Thus, the data about the changing student demographics are available to interested readers. See Table 2 below for percentages, by race/ethnicity, 1994-2009, for eighth-grade students nationally.

2. Objectives

The primary objective of the study was two-fold: First, to determine, for the period 2003-2009, if the U.S. poverty achievement gap has narrowed between students eligible for the free / reduced price school lunch program and students not eligible, using National Assessment of Educational Progress (NAEP) measures of reading and math. The second part of the primary object was to make projections about the size of the poverty gap for years 2011, 2013, and 2015. A secondary objective was to determine for each of the 50 states, for the 2003-2009 period,

whether the poverty achievement gap has narrowed. Thus, the secondary objective pertains to the poverty achievement gap for states, while the first objective pertains to the poverty achievement gap for the nation.

3. Method

The focus of the study was on eighth-grade students' performance on NAEP tests of reading and math in 2003, 2005, 2007, and 2009. The NAEP reading and math reports (*The Nation's Report Card*) for the four years provided demographic and achievement data for the nation and for the 50 states. I elected to use the "percent proficient" achievement classification as the measure of interest rather than "average scale scores". I used "percent proficient" because I judged that measure to be more widely used by the national and educational press than "average scale scores."

The first objective of the study was to determine if the poverty achievement gap has narrowed between 2003 and 2009 for U.S. public school students. Each NAEP *Report Card* provides score gap trend data for the nation. However, the score gap trend data refer to all students, public and private. To develop trend data for public school students only, one must go to the respective *Reading & Mathematics Report Cards* for 2003, 2005, 2007, and 2009.

The analyses employed for the first objective of the study can be deduced by an inspection of Table 1 below. In this study, the term "poverty gap" is used to denote the difference between the percent of students eligible for free / reduced price lunch and the percent of students not eligible. (Hereafter free / reduced price lunch will be shortened to "free lunch".) The term "poverty achievement gap" is used to denote the difference between the "scores" (percent proficient) of students eligible for free lunch and the "scores" (percent proficient) of students not eligible for free lunch.

Figure 1 below presents in graph form the percentages of eligible and not eligible students for 2003, 2005, 2007, and 2009. Also in Figure 1 are presented the projections of the national poverty gaps for 2011, 2013, and 2015. The poverty gap projections were made by the author by inspection of the 2003-2009 trends. Thus, I projected the 3 percentage point increase of eligible students (2007-2009) to continue to 2011; hence, for 2011, the percentage of eligible students was projected to be 46%. Consequently, the not eligible percentage was projected to be 54% ($100\% - 46\% = 54\%$). The percentages of eligible students were projected to be 49% in 2013, and 52% in 2015. For not eligible students, the projected percentages were 51% in 2013, and 48% in 2015.

National demographic data for eighth-grade public school students for 2003, 2005, 2007, and 2009 are presented in Table 2 below. The projections in Table 2 for 2011, 2013, and 2015 were based on visual inspection of the 2003-2009 NAEP data.

4. Results

The results pertaining to the first objective are presented in Table 1. Table 1 shows that the national poverty achievement gap increased from 26 percent proficient in 2003 to 28 percent

Table 1.

Poverty Gaps and Poverty Achievement Gaps for U.S. Eighth-grade Students on the National Assessment of Educational Progress Tests in Reading and Math for 2003, 2005, 2007, and 2009.

Grade 8	2003			2005			2007			2009		
	Not Eligible	Eligible	Gap	Not Eligible	Eligible	Gap	Not Eligible	Eligible	Gap	Not Eligible	Eligible	Gap
Reading												
Percent of students	58	36	(22)	59	39	(20)	58	40	(18)	56	43	(13)
"Percent Proficient"	39	15	<u>24</u>	38	15	<u>23</u>	39	15	<u>24</u>	41	16	<u>25</u>
Math												
Percent of students	58	36	(22)	59	39	(20)	58	41	(17)	56	43	(13)
"Percent Proficient"	37	11	<u>26</u>	39	13	<u>26</u>	42	15	<u>27</u>	45	17	<u>28</u>

Note: The figure in parentheses denotes the difference (gap) between the percentage of not eligible and the percentage of eligible students. The underlined figure denotes the gap in "Percent Proficient" for the two groups; this is the poverty achievement gap. Source: National Center for Education Statistics, Washington, D.C. *The Nation's Report Card (for Reading and Mathematics)*, 2003, 2005, 2007, and 2009.

proficient in 2009 for eighth-grade math; for reading the poverty achievement gap increased from 24 percent proficient in 2003 to 25 percent proficient in 2009. Thus, the poverty achievement gap increased by 2 percentage points in math; and by 1 percentage point in reading in six years.

Figure 1 below presents the percentage of students eligible for free lunch and the percentage of students not-eligible for 2003, 2005, 2007, and 2009. The associated poverty gaps for those four years were 22, 20, 18, and 13, respectively. Figure 1 also presents the author's projections of the percentages of eligible and not eligible students for 2011, 2013, and 2015. Thus, my projections for 2015 show that the percentage of eligible students (52%) will be larger than the percentage of not eligible students (48%) for the first time since NAEP data have been available. Until actual data for 2011 and 2013 and 2015 are available, these projections remain to be confirmed. It is beyond the scope of this paper to speculate on various possible outcomes.

Table 2 presents data which pertain to the changing demographics for eighth-grade students nationally. Table 2 shows that the percentage of white students decreased by 15 percentage points from 1994 to 2009, a decrease of approximately one percentage point per year. For the most recent period (2003-2009), the percentage of white students decreased from 61 to 57, a decrease of four percentage points, or approximately seven-tenths percentage points per year. As shown in Table 2 the percentage of Hispanic students increased dramatically from 8% in 1994 to 20% in 2009. The rate of increase from 2003 to 2009 was slower; 15% to 20% roughly eight-tenths percentage point increase per year.

I assert that a useful interpretation of the demographic data in Table 2, for the period 2003-2009, is that the percentage of white students is decreasing at approximately the same rate as the percentage of Hispanic students is increasing, and that the percentage of Black, Asian, and Alaska Native students is nearly constant.

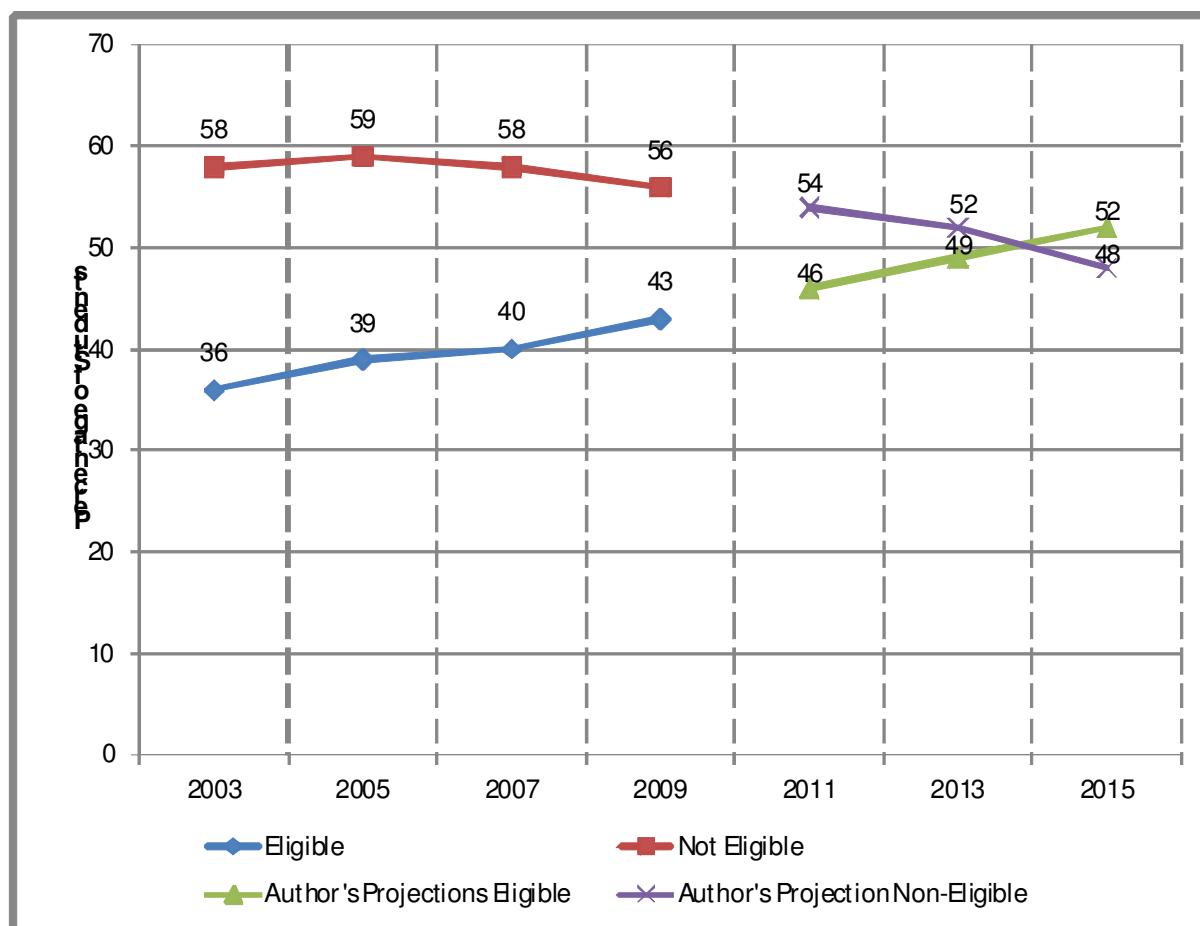


Fig. 1. Percentages of Eighth-grade Students Eligible and Not Eligible for Free/Reduced Price Lunch: Years 2003-2009, with Author's Projections for 2011, 2013, and 2015. *Note.* Source: National Center for Educational Statistics. *The Nation's Report Card, Reading* (2003, 2005, 2007, 2009). Projections are author's projections based on inspection of trend lines.

My projections in Table 2 for white eighth-grade students assume a decrease of one percentage point per year for 2011, 2013, and 2015; for Hispanic students my projections assume an increase of one percentage point per year.

Table 2.

Percentage of Students Assessed in Eighth-grade NAEP Reading by Race/ethnicity. Various years, 1994-2009 with Projections by the Author for 2011, 2013, and 2015

Race/Ethnicity	1994	1998	2002	2003	2005	2007	2009	2011	2013	2015
White	72	70	65	61	60	58	57	55	53	51
Black	16	15	15	17	17	17	16	16	16	16
Hispanic	8	11	14	15	17	18	20	22	24	26
Asian/Pacific Islander	3	3	4	4	4	5	5	5	6	6
American Indian / Alaska Native	1	0	1	1	1	1	1	1	1	1

Note. Source: NCES. *The Nation's Report Card: Reading, 2003, 2005, 2007, 2009*. Percentages for 1994, 1998, and 2002 refer to all students nationwide, not only public school students. Percentages for 2003, 2005, 2007, and 2009 refer to public school students only. **Percentages for 2011, 2013, and 2015 are projections by the author. See text for details.**

Table 3 below presents the poverty gap for 2003 and 2009 for each of the 50 states, as well as the change in the percentage of students eligible for free lunch between 2003 and 2009. The states are ordered by percent of students eligible for free lunch in 2003. Mississippi is listed first because Mississippi had the largest percentage (57%) of students eligible for free lunch; New Hampshire is listed last because its free lunch percentage (13%) was the lowest. The minus signs in the poverty gap columns indicate the percent eligible is larger than the percent not eligible.

Perhaps the main picture which Table 3 portrays is one of wide differences among the states in the percentages of students eligible for free lunch. In 2003, Mississippi, New Mexico, and Louisiana had 50% or more of their students eligible while ten states had 25% or fewer students eligible. The figures for 2009 are quite similar to 2003 in terms of the spread of the free lunch percentages.

The last column in Table 3 reports the change in the percent of students eligible for free lunch between 2003 and 2009. Only one state, Hawaii, had a smaller percentage of eligible students in 2009 than in 2003 (41% vs. 43%); five states had zero change. Thus, 44 states had increases in their percentages of students eligible for free lunch over the six-year period. For the nation, the percentage of students eligible increased by seven percentage points (36% to 43%).

Table 3

Percentage of Students Eligible and Not Eligible for Free Lunch in 2003 and 2009 for Each of the 50 States.

States:

2003				2009			2003 to 2009 Change in Percent Eligible for free / reduced price lunch
Eligibility for free / reduced price school lunch			Eligibility for free / reduced price school lunch				
State	Percent Eligible	Percent Not Eligible	Poverty Gap	Percent Eligible	Percent Not Eligible	Poverty Gap	
Mississippi	57	39	-18	66	33	-33	9
New Mexico	51	40	-11	63	35	-28	12
Louisiana	50	38	-12	62	38	-24	12
Alabama	47	53	6	50	50	0	3
West Virginia	47	53	6	52	48	-4	5
Arkansas	46	49	3	53	47	-6	7
South Carolina	45	53	8	51	49	-2	6
Texas	45	53	8	53	47	-6	8
New York	44	51	7	44	52	8	0
Oklahoma	44	54	10	48	52	4	4
Florida	43	52	9	48	52	4	5
Georgia	43	52	9	49	50	1	6
Hawaii	43	56	13	41	59	18	-2
Kentucky	42	55	13	48	52	4	6
Arizona	41	47	6	47	51	4	6
California	41	46	5	53	45	-8	12
North Carolina	37	51	14	44	54	10	7
Illinois	37	60	23	39	61	22	2
Tennessee	37	60	23	43	57	14	6
Idaho	35	56	21	36	62	26	1
Delaware	33	58	25	38	62	24	5
Kansas	32	66	34	42	57	15	10
Nevada	32	64	32	35	65	30	3
South Dakota	32	68	36	32	68	36	0
Missouri	31	66	35	36	64	28	5
Montana	30	65	35	34	66	32	4
Indiana	29	67	38	37	63	26	8
Rhode Island	29	63	34	38	62	24	4
Maine	28	70	42	35	65	30	7
Nebraska	28	68	40	37	63	26	5
Pennsylvania	28	69	41	33	67	34	5
North Dakota	27	73	46	29	71	42	2
Utah	27	70	43	27	64	37	0
Washington	27	59	32	37	63	26	0
Wyoming	27	72	45	29	71	42	2
Colorado	26	72	46	35	63	28	9
Connecticut	26	71	45	26	74	48	0

Maryland	26	67	41	31	69	38	5
Michigan	26	66	40	38	62	24	12
Oregon	26	68	42	41	57	16	15
Iowa	25	72	47	33	67	34	8
Vermont	25	75	50	29	71	42	4
Virginia	25	71	46	31	69	38	6
Alaska	24	67	43	36	62	26	12
New Jersey	24	68	44	27	71	44	3
Ohio	23	65	42	34	66	32	11
Massachusetts	23	65	42	29	71	42	6
Minnesota	22	77	55	27	73	46	5
Wisconsin	22	68	46	31	66	35	9
New Hampshire	13	79	66	20	71	51	7
Nation	36	58	22	43	56	13	7
District of Columbia	57	31	-26	73	26	-47	16

Note. Poverty Gap is the difference between Percent Not Eligible and Percent Eligible. Percentages of Not Eligible for free lunch and percentages Eligible for free lunch from *The Nation's Report Card: Mathematics 2003* and *The Nation's Report Card: Mathematics 2009*.

Table 4 presents the poverty achievement gaps for each of the 50 states for 2003 and 2009. Also, in the last column of Table 4, the changes in the poverty achievement gap between 2003 and 2009 are reported. My focus here is on the changes. For the nation, the 2009 poverty achievement gap increased by two percentage points (26% to 28%) over the 2003 value. Of the 50 states, four had decreases, four had no change, and 42 had increases.

Table 4.

Poverty Achievement Gap in 2003 and 2009 Together with the Change in the Poverty Achievement Gap for Each of the 50 States.

2003				2009			2003 to 2009 Change in Poverty Achievement Gap
State	Eligibility for free / reduced price school lunch		Poverty Achievement Gap	Eligibility for free / reduced price school lunch		Poverty Achievement Gap	
	Eligible "Percent Proficient"	Not Eligible "Percent Proficient"		Eligible "Percent Proficient"	Not Eligible "Percent Proficient"		
Mississippi	5	23	18	8	30	22	4
New Mexico	7	23	16	11	34	23	7
Louisiana	8	29	21	11	35	24	3
Alabama	7	24	17	10	31	21	4
West Virginia	10	28	18	11	28	17	-1
Arkansas	12	25	13	15	40	25	12
South Carolina	12	38	26	16	45	29	3
Texas	12	36	24	23	51	28	4

New York	16	45	29	22	43	21	-8
Oklahoma	10	28	18	14	33	19	1
Florida	11	34	23	18	40	22	-1
Georgia	8	34	26	13	41	28	2
Hawaii	8	24	16	15	32	17	1
Kentucky	11	33	22	15	38	23	1
Arizona	9	31	22	14	42	28	6
California	9	32	23	12	37	25	2
North Carolina	14	42	28	18	50	32	4
Illinois	10	41	31	14	45	31	0
Tennessee	9	28	19	13	35	22	3
Idaho	17	35	18	25	46	21	3
Delaware	10	32	22	17	41	24	2
Kansas	19	41	22	24	51	27	5
Nevada	10	25	15	14	31	17	2
South Dakota	22	41	19	24	49	25	6
Missouri	13	35	22	19	45	26	4
Montana	23	40	17	27	52	25	8
Indiana	16	37	21	21	45	24	3
Rhode Island	8	33	25	12	37	25	0
Maine	16	35	19	19	44	25	6
Nebraska	15	40	25	17	45	28	3
Pennsylvania	10	38	28	18	50	32	4
North Dakota	23	41	18	27	49	22	4
Utah	18	36	18	20	40	20	2
Washington	16	40	24	20	51	31	7
Wyoming	18	37	19	20	41	21	2
Colorado	13	43	30	19	51	32	2
Connecticut	12	44	32	13	49	36	4
Maryland	10	36	26	17	50	33	7
Michigan	13	34	21	13	41	28	7
Oregon	17	37	20	21	48	27	7
Iowa	15	39	24	17	42	25	1
Vermont	16	41	25	24	51	27	2
Virginia	11	38	27	15	45	30	3
Alaska	13	36	23	19	42	23	0
New Jersey	10	41	31	20	53	33	2
Ohio	11	38	27	18	45	27	0
Massachusetts	13	46	33	29	61	32	-1
Minnesota	24	50	26	21	56	35	9
Wisconsin	12	43	31	20	48	28	-3
New Hampshire	16	38	22	24	48	24	2
Nation	11	37	26	17	45	28	2
District of Columbia	2	12	10	7	24	17	7

Notes. States in Table 4 in same order as Table 3. "Percent Proficient" values from *Nation's Report Card: Mathematics, 2003* and *Nation's Report Card: Mathematics, 2009*. Poverty Achievement Gap is Not Eligible "Percent Proficient" minus Eligible "Percent Proficient". Change in Poverty Achievement Gap is 2009 Poverty Achievement Gap minus 2003 Poverty Achievement Gap. A minus sign in the change column indicates that the 2009 Poverty Achievement Gap was smaller than for 2003.

5. Educational Implications

As cited above the authors of *Schooling Disadvantaged Children* (Natriello et al., 1990) pointed out that “assuming a constant relationship between racial/ethnic group identity and poverty, as the number and proportion of black and Hispanic children increase, so too will the number and proportion of children in poverty.” The authors’ projections concerning the changing percentages of whites and Hispanics in the school-age population in 2010 appear to be generally “correct”. The NAEP *Reading 2009* (NCES, 2009) report shows that the percentage of the Hispanic eighth-grade students in 2009 was 20%; the figure in *Schooling Disadvantaged Children* was approximately 20%.

The NAEP *Reading 2009* (NCES, 2009b) report shows that the percentage of the Hispanic public school enrollment for the nation increased from 11% in 1998 to 20% in 2009. Thus, for Hispanic eighth-grade students nationally the percentage nearly doubled (88% increase) in eleven years. For whites, the percentage decreased from 70% to 58%. See Table 2 above.

MacInnes (2009) remarks on the effect of the increase in the percentage of Hispanic students in New Jersey cities: “The impact of Latinization on communities includes an increase in the proportion of families that have incomes under the poverty line....” I cite MacInnes as one author who has described in some detail the consequences of the changing student demographics. Another writer, (Swanson, 2010) discusses the impact of an increased Hispanic enrollment on high school graduation rates. Swanson says:

The size of the Latino student population whose graduation rate currently lags 21 percentage points behind that of non-Hispanic whites, has grown 50 percent in the past decade alone. Put simply, the challenge of improving high school graduation

rates in analogous to swimming upstream against a rapid and generally unfavorable demographic current. (p. 23)

I cite MacInnes (2009) and Swanson (2010) because they provide examples of importance which the increasing proportion of Hispanic students has played in the last decade or so. But what about the prospects for public school education in the next decade, or for a shorter time period, 2011 – 2015? In this paper (Figure 1) I make projections concerning the percentages of disadvantaged students for the years 2011, 2013, and 2015. My projections suggest that the scores of disadvantaged students will soon “outweigh” the scores of advantaged students. In my view the increasingly large numbers of disadvantaged students will begin to tip the scales so that sometime in the next four or five years, the national NAEP scores will decline slowly.

Although for the nation in 2009 the percentage of students eligible for free lunch was below 50%, eight states in 2009 had free lunch percentages above 50%: Arkansas (55%), California (52%), Louisiana (62%), Mississippi (66%), New Mexico (63%), South Carolina (51%), Texas (53%), and West Virginia (53%). Each of the eight states had a percent proficient “score” lower than the national mean (30%) on the NAEP 2009 Reading test (NCES, 2009b).

6. Conclusions and Predictions

The national poverty achievement gap increased slightly from 2003 to 2009. If the thrust of the national reform efforts is to reduce the poverty achievement gap, then this slight increase must be viewed as “bad news.” My projections (made in October 2011) of an increase in the percentage of disadvantaged students in the next four or five years are seriously at odds with the current conventional wisdom that reform efforts will somehow close, let alone narrow, “the achievement gap.”

I make two predictions (October 2011):

1. In 2011 the national poverty achievement gap for reading will not narrow; it will increase slightly.
2. For more than half the states, (26 or more), the poverty achievement gap will increase in 2011 over the 2009 value (for Grade 8 reading).

“Answers” to these predictions should be available shortly. The *Reading 2011* report should be released in November or December, 2011.

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